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SUBJECT: Liability Issues Regarding Transfer of LANDSAT and Weather Satellites to Private Sector

The current U.S. program in civil space remote sensing consists of a single operational land satellite (LANDSAT) and four operational weather satellites (GOES and TIROS-N) in orbit. The Administration has proposed the transfer of these satellites to the private sector and has established a Source Evaluation Board to evaluate the proposal. This study is in response to your request for an examination of the liability issues involved in the transfer.

In discussing the matter, this memo will touch on the following questions:

(1) What is the current liability status of the satellite programs?

(2) If a transfer is effected, what liability does the private entity incur if persons or property are injured by one of the satellites?

(3) What liability, if any, does the private entity incur in its provision of, or failure to provide, data upon which weather forecasts or similar predictions are based?

(4) What liability, if any, does the United States retain concerning the events outlined in questions two and three?

(5) Should the liability issues be addressed in the RFP?

It should be kept in mind that these liability issues and situations are really ones of first impression, since, even though space vehicles and their fragments have been falling back to earth since Sputnik was launched, no serious injury has been reported.

1. What is the Current Liability Status of the NOAA Satellite Programs

There are two hypothetical situations here. The first involves damage or injury to a foreign (non-U.S.) national or foreign property. The second is if the victim is a U.S. national. The satellites of course are government owned at present.

International Liability of the U.S. Government

In the first scenario, there are four international conventions which would apply to the existing NOAA satellites. These are the Convention on International Liability for Damage Caused by Space Objects, March 29, 1972 [1973] 24 U.S.T. 2389, T.I.A.S. 7762 (hereinafter cited as Liability Convention); the treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (hereinafter referred to as the Outer Space Treaty), October 10, 1967 [1967], 18 U.S.T. 2410, T.I.A.S. 6347, 610 U.N.T.S. 205; the Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space, April 22, 1968 [1968] 19 U.S.T. 7570, T.I.A.S. 6599, 672 U.N.T.S. 119 (hereinafter cited as The Rescue Agreement); and the Vienna Convention on Civil Liability for Nuclear Damage.

The Liability Convention

Article II of the Liability Convention states: "A launching state shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight." The reference to "its" space object in Article II is not entirely clear. Does this mean only a space object of the launching state, meaning the government itself, or a space object owned by a some private entity of that country, or both? Under Article I the term "launching State" includes: (1) A state which launches or procures the launching of a space object; or (2) A state from whose territory or facility a space object is launched. It would seem that this language indicates a desire to make the launching state, or in our case the U.S. Government, absolutely liable to foreign governments, businesses, and individuals for personal and property damage caused by space objects under the control of the U.S. Government or one of its nationals.

Article II makes it clear that there are three elements which must be proved before recovery can be had. First, there must be damage; second, there must be a space object; and third, the damage must be caused "by" the space object. Proof of negligence is not required since the launching state is absolutely liable-irrespective of any fault on its part-for damage caused on the surface of the earth or to aircraft in flight.

The Outer Space Treaty

This Treaty provides in Article VI that states which are parties to the Treaty shall bear international responsibility for national activities in outer space. Article VII goes further by stating that each state which launches or procures the launching of a space object, and a state from whose territory or facility an object is launched, is internationally liable for damage to another state or its natural or juridicial persons on the earth, in the air, or in space.

It is doubtful that the Outer Space Treaty could be regarded as imposing more liability than the Liability Convention. This becomes quite apparent from the fact that the Treaty does not mention absolute liability which is incorporated in the Liability Convention with respect to damage on earth or to aircraft in flight. Also, the three essential elements, namely that there must be damage, that is must be done by a space object and that there must be proximate causation are equally important under the Outer Space Treaty. In addition, the Liability Convention, unlike the Outer Space Treaty, refers to principles of justice and equity in determining the compensation which the launching state is liable to pay for damage in order to provide such reparation as will restore the person on whose behalf the claim is presented to the condition that would have existed if the damage had not occurred.

The Rescue Agreement

Another convention which may be considered is the Rescue and Return Agreement. Under the provisions of this agreement there are two situations in which expenses associated with the recovery and return of space objects would have to be borne by the launching authority: first, if that authority requested the recovery of its space object and second, if the launching authority requested the return of its space object. If either or both of these conditions are met, the launching authority is required to pay the expenses associated with the recovery and return.

The Vienna Convention

Finally, it may be noted that if the fall of a space object or debris on a nuclear installation is instrumental in bringing about a nuclear incident on earth, the resulting damage may be covered under both the Liability Convention and the Vienna Convention. It should be noted, however, that proof of damage in the sense of direct damage rather than consequential damage or precautionary measures taken to avert potential damage would also appear to be required under the Vienna Convention if it is strictly interpreted.

The provisions of the Outer Space Treaty concerning liability are covered in more general terms than those of the Liability Convention, which came later, and appear to be an elaboration of the principle of liability enunciated in the Outer Space Treaty much the same as the Rescue and Return Agreement is, to a great extent, an elaboration of the principles incorporated in the Outer Space Treaty concerning the rescue and return of astronauts and the return of space objects.

Domestic Liability of the U.S. Government

Since the Liability Convention excludes its coverage from situations where the damage is caused by a launching state to one of its nationals, an injured American national would have to look for other remedies to pursue a claim against the U.S. Government for harm caused by one of its space objects.

Under the Federal Tort Claims Act, 28 U.S.C. § 1346(b) et seq., the government has given its consent to be sued for "...money damages... for injury or loss of property, or personal injury or loss of property, or personal injury or death caused by the negligent or wrongful act or omission of any employee... while acting within the scope of his office or employment, under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred." The words of the statute "negligent or wrongful act" have been interpreted to mean that liability will be imposed only upon the theory that the employees of the government have failed to exercise ordinary care or have engaged in some other conduct constituting misfeasance or malfeasance. See Dalehite v. United States, 346 U.S. 15 (1953); Laird v. Nelms, 406 U.S. 797 (1972). Liability, however, is not fully coextensive with that of a private individual, for these are a variety of types of claims that are expressly excluded from its coverage. 28 U.S.C. § 2680. Of interest to the present discussion are the so-called "discretionary function" exception, 28 U.S.C. § 2680(a) and the misrepresentation exception, 26 U.S.C. § 2680(h).

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The discretionary function exception provides:

> The provisions of this chapter and section 1346(b) of this title shall not apply to -- (a) Any claim based upon an act or omission of an employee of the Government, exercising due care, in the execution of a statute or regulation, whether or not such statute or regulation be valid or based upon the exercise of performance or the failure to exercise or perform a discretionary function of duty on the part of the federal agency or an employee of the Government, whether or not the discretion involved be abused. (Emphasis added)

There is a substantial body of case law interpreting the discretionary function exception. See, Dalehite v. United States, supra.; Indian Towing Co. v. United States, 350 U.S. 61 (1955); Rayonier, Inc. . United States, 352 U.S. 315 (1957); Dahlstrom v. United States, 228 F.2d 819 (8th Cir. 1956). The traditional inquiry for determining if the discretionary function exception applies is an analysis of whether the particular act of a government agent is one involving the formulation of government policy or whether the act in question occurs in implementing a policy at an "operational" level. The judicial interpretations of this distinction provide no clear standards for determination of the applicability of the discretionary function exception. Rather, the judicial constructions of 28 U.S.C. § 2680(a) have tended to examine all relevant factors in an assessment of whether the act in question was at a policy making level which Congress intended to place beyond judicial review or at the functionary or operational level which was intended to be reviewable. See, Downs v. United States, 522 F.2d at 997; and Sami v. United States, 617 F.2d 755, 765-68 (D.C. Cir. 1979).

Therefore, a potential plaintiff injured by falling debris from a NOAA satellite will have a difficult enough time establishing negligence, but even if he did, he would then have the very difficult hurdle of discretionary function to overcome. The act of placing a satellite in space certainly is an act covered by the exception and even though it is known that someday some part of it may fall back to earth, I believe the exception would still apply unless some gross misfeasance or nonfeasance were shown.

In the area of weather forecasting, the discretionary function exception as well as the misrepresentation exception have consistently been held to bar suits alleging negligence in the formulation of such forecasts. In Bartie v. United States, 216 F.Supp. (W.D. La. 1963), aff'd 326 F.2d 754 (5th Cir. 196), cert. denied, 379 U.S. 852 (1964), the plaintiff sued the Weather Bureau as a result of the death of his wife and children which occurred during a hurricane. Plaintiff's claim was based on the negligence of the Weather Bureau in failing to give adequate warning of the intensity of the impending hurricane. The Court in a well reasoned opinion held such allegations constituted allegations of negligent misrepresentation and as such are barred by the Federal Tort Claims Act. Similarly the Eighth Circuit also concluded that the misrepresentation exception of 28 U.S.C. § 2680(h) was applicable where there were allegations that the National Weather Service negligently disseminated information in regard to the rising flood stage of a Kansas river immediately prior to a flood. National Manufacturing Co. v. United States, 210 F.2d 263 (8th Cir. 1954), cert. denied, 347 U.S. 967 (1954). In National Manufacturing Co., supra, the Court went on to say that, not only is the misrepresentation exception a bar to suit where the

allegations are one of dissemination of data and information, but also includes allegations involving negligence in failing to inform or warn that a flood is coming.

In Bartie, supra, the court in not only finding the misrepresenation exception as being applicable, stated that the discretionary function exception to the Federal Tort Claims Act was equally controlling. The Court stated that considering the background and the knowledge and the continual evaluation which is made in the analysis of meteorological data that, "these evaluations involved the exercise of judgment and discretion." Bartie, supra at 14. Further as to allegations of improper prediction and dissemination of forecast information subjective judgment is necessarily employed in decisions that are made, and the means and methods of obtaining observation data require continual exercise of judgment and discretion. Bartie, supra at 19. Recently in the case of Williams v. United States, 504 F.Supp. 746, 750 (E.D. Mo. 1980) the court in rejecting plaintiff's claims of negligent prediction, stated that the "the forecasts or omissions of forecast is a discretionary function excepted from the Federal Tort Claims Act."

It has never been alleged to my knowledge that the basis of an improper forecast was either faulty data or the lack of data from a satellite, so the likelihood of such a claim remains remote. The reason we have never seen such a case is probably because of the acknowledged reliability of satellite data and the fact that much more goes into formulating a weather forecast than satellite information.

We are currently litigating a case in Boston (Brown, et al. v. U.S.), which should go to trial later this year involving alleged negligent weather forecasting as a result of faulty and incomplete data from a NOAA weather buoy, and the result could be analgous to the satellite situation.

Most of the U.S. activity involving space objects involves NASA. While NASA is certainly covered by the Federal Tort Claims Act, they also have special authority to consider claims where the injuries or damage have arisen from the "...conduct of the Administration's (NASA's) function...". 42 U.S.C. § 2473. There is no requirement that the claimant allege or show negligence or other wrongful conduct. Nor does the claimant have to show that the direct cause of the damage resulted from acts or omissions of Federal employees. It need only be shown that the damage was the proximate result of the activities of the agency's space or related programs. The only limitation to the statutary authority is that it is limited to a maximum of $25,000.00 per claim. Claims for more than this, if not considered under the FTCA, could be submitted to Congress for its consideration.

The Secretary of Commerce and NOAA have a similar statutory claims authority found at 33 U.S.C. 853 for acts for which the agency "is found to be responsible", but this is presently limited to only $500.00 and therefore has little significance to the present situation. An attempt to increase this amount to $2,500.00 has been on-going for about four or five years but never seems to make it all the way through Congress.

2. If a Transfer is Effected, What Liability Does the Private Entity Incur if Persons or Property Are Injured By One of the Satellites?

Presumably this would encompass situations where a satellite or part of it fell to earth and caused some injury or damage, or perhaps by going out of its orbit damages another space object.

The Liability Convention does not address itself to the accountability of private corporations to persons injured by fallen space objects owned by them. This is a serious omission in light of the fact that the Outer Space Treaty places responsibility upon parties to the treaty (which includes the U.S.) for space activities whether the acting entity is governmental or nongovernmental. Arguably, a claimant could attempt to impose the responsibility of the Outer Space Treaty through the medium of the Liability Convention upon the launching state, or United States in our case. The private entity itself would also be liable, but not under one of the treaties. Liability could be predicated on a general theory of negligence, although a better theory to proceed upon would be strict liability. Space activities would seem to be the type of high-risk activities upon which a foundation for the imposition of strict liability could be grounded. Thus it would appear the private entity would have liability exposure in this area as an owner of the satellites.

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3. What Liability, if Any, Does the Private Entity Incur in Its Provision of, or Failure to Provide Data Upon Which Weather Forecasts or Similar Predictions Are Based?

The private entity would presumably assume responsibility for the accuracy and contents of its products and would accordingly be liable in tort for negligence in the promulgation of this data. It is anticipated that the private entity would want to join to the lawsuit any recipient of the meteorological data which issued a negligent forecast such as a private weather concern or the National Weather Service.

The private business would of course not have the protection of the discretionary function and misrepresentation exceptions to the Federal Tort Claims Act so its exposure in this area would

be greater than that of the U.S. However, liability seems remote at present because the satellite data has never, to date, been the cause of a negligent weather forecast or the lack of some severe storm warning that I am aware of. This could of course change if weather forecasting techniques become more dependent on satellite information, especially in the area of hurricane and severe storm monitoring. In addition to weather information, however, any type of data interruption could potentially be a source of liability for the private entity.

4. What Liability, if Any, Does the United States Retain Concerning the Events Outlined in Questions Two and Three?

It seems likely that if, after a transfer was effected, one of the satellites caused damage or injury to someone, the United States with its "deep pocket" would be made a party to the claim or litigation.

If the injury or damage occurred to a foreign state or its property, or a foreign business or national, the U.S. Government would continue to remain absolutely liable under the Liability Convention and most likely under the Outer Space Treaty.

As to injury or damage to U.S. nationals or companies, the U.S. would still presumably be brought into the case even after the transfer for any number of reasons and liability, while unlikely, would remain a possibility.

As for weather forecasting by the United States, we will remain in the same basic legal position vis a vis the user of our forecasts, whether they be private concerns or the public, as before such a transfer. We still would have a duty to use reasonable care given the state of the art in our forecasting. Of course, if the reason our forecast, or lack of a forecast, was found to be actionable was because of negligence by the private satellite owner, we would have an indemnity or contribution action against the private entity.

In addition, if the Space Shuttle or other NASA equipment were to be used to launch a new satellite or service one of the currently orbiting NOAA satellites, and the Shuttle and/or its contained payloads were to cause damage to a third person, under traditional U.S. tort law all of the users and NASA would have potential liability to the injured third person, based on concepts either of negligence or strict liability. Actual liability, or course, would depend on proof of a causal relationship between the damage or injury and the acts or failures to act of a user. Insurance and indemnification requirements as to use of NASA facilities and space vehicles would be worked out between the private entity and NASA.

Using the NASA situation as a model, it would appear to be in the best interest of the government to require the private

entity to enter into an indemnification agreement with the U.S. and to procure liability insurance. Under NASA's current policies, commercial users are required to obtain third-party liability insurance (or self-insure for third-party liability) and that insurance (or self-insurance) must protect the United States from potential tort liability resulting from injury to third parties. Such policies are written by Lloyds of London and are normally required to cover up to $500 million in liability.

Presumably our private entity would obtain insurance covering its own interests anyway. The issue is whether or not we should require them to name the United States as an insured and whether we would require an indemnification agreement as part of the transfer package. I believe it would be essential for the U.S. to require such an indemnification of the Government, especially for injury or damage for which the United States would become liable under either the Liability Convention or Outer Space Treaty, where the U.S. was free from fault itself. Such indemnification should also cover domestic situations where the U.S. is held responsible, such as in the forecasting area, but the actual negligence is attributable to the private entity. In addition, in order to make this a realistic goal we should require that the private entity procure a substantial amount of liability insurance to cover itself and enable it to indemnify the U.S. where appropriate.

It should also be kept in mind that the U.S. would be absolutely liable in the international arena and potentially liable domestically for claims above and beyond the insurance coverage of the private entity, or whatever corporate assets could be reached.

5. Should the Liability Issues Be Addressed in the RFP?

In line with the previous discussion, I believe these issues should be dealt with in the RFP. Any entity wishing to purchase and assume responsibility for the NOAA satellites should be required to purchase substantial liability insurance and sign an indemnification agreement with the United States.

Assuming the insurance required to be in the $500 million range, this still leaves open the possibility, although remote, of liability exceeding this amount and a decision will have to be made as to whether the U.S. will require indemnity above this figure or whether the U.S. will become, in effect, an insurer of the private entity's activities over a certain sum.

Conclusion

In summary, at present the United States is absolutely liable to the international community for damage caused by one of the NOAA satellites under the Liability Convention and Outer Space

Treaty. As to U.S. nationals and companies, there is potential liability under the Federal Tort Claims Act depending on the circumstances of the incident.

If a transfer is effected to a private concern, the U.S. will still remain absolutely liable under the Liability Convention to foreign nationals or entities. As to U.S. nationals, the U.S. may or may not retain liability depending on the nature of the claim and the actual circumstances of the case, i.e., weather forecasting, as a seller of an inherently dangerous product, etc. Of course, the private entity which assumes control of the satellites will be potentially liable under theories of negligence or strict liability. Foreign nationals would presumably submit claims against the U.S. under the Liability Convention since they wouldn't even have to prove negligence, giving rise to an indemnity action by the U.S. against the private entity. Potential indemnity actions also would exist against the private entity for domestic claims as well.

As a result, it would seem prudent that the private concern be required to prove liability insurance to cover any damages or to indemnify the United States if appropriate. Lastly, there is the issue of what to do about liability over and above the limits of the insurance coverage, which would fall against the United States in most cases whether the U.S. was negligent or not.